1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p.34a] Sierra Tarascans

128 ties. Neither are descriptions of dress or house use entirely appropriate under the heading of manufacturing processes. Nevertheless, there is a certain cultural or associative logic involved which would be violated by too rigid adherence to the literal meaning of categories.

CERAMICS

339 [323] No native ceramic industry exists in Cherán. Pottery is not made, but in 1940 two men, both non-Tarascans, made roofing tile and brick.

[413]

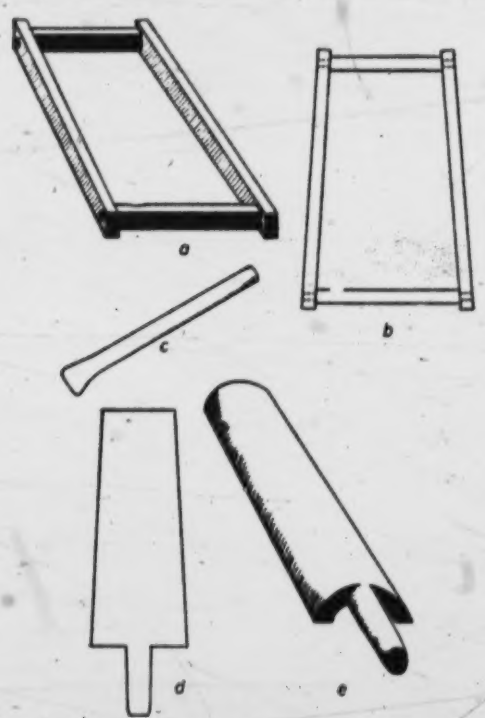


FIGURE 5.—Tilemaker's implements. *a*, Perspective view of the mold. *b*, Direct view of the mold to show proportions and the shape, which is narrower at one end than the other. *c*, Wooden chisel or knife used to loosen clay from mold if necessary (length about 18 inches with other artifacts in proportion). *d*, Outline of the form for tiles. *e*, Perspective view of the form for tiles. The mold is filled with clay and the top smoothed. The mold is then lifted up, leaving the clay on a bench top. The clay is then slid onto the form to receive the curved shape of the tile. After a few minutes drying, the unfired tile is slipped off the form onto the floor to complete the drying process.

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p.346] Sierra Tarascans

939 Both men had arrived with the highway construction crews; neither was making what he regarded as a satisfactory living and both hoped to leave.

Tile and brick are made in an old chapel and surrounding grounds, formerly part of the *curato* or curacy. Ten percent of the finished [427] tile or brick is given to the *municipio* as rent [632] for the buildings and for the right to dig clay on public lands.

A grayish clay is brought to the factory in sacks by mules. It is mixed with water and manure in a board-lined pit in the patio, where it is turned with spades and hoes and trodden with bare feet. The mixed clay is pressed into a trapezoidal wooden form laid flat on a table (fig. 5). The top is smoothed carefully with the wet hand. The clay is then slipped off the table onto a wooden form resembling half of a truncated cone, but with a handle. After a few moments, the clay, now in the shape of a tile, is slipped off on the floor. When fairly well dried, the tile is moved outdoors for further drying.

Bricks are made in the same fashion but with a different wooden form. Both brick and tile are fired in a wood-fired kiln in the patio. The wood is cut and hauled by the brickmakers and tilemakers. The time required to make a thousand brick or tile is about 9 days, as follows:

	Days
Getting and mixing clay	2
Cutting and hauling wood	1
Shaping 1,000 brick or tile	5
Loading kiln	1
Total	9

TEXTILES

285 *Mats.*—Most sleeping mats used in Cherán are imported, but at least three women make [478] them locally. The mats are made of tules imported on burros from Erongaricuaro on Lake Pátzcuaro. The mats are made in twilled technique, usually treating two tules as a single weaving element. The only tool observed was [412] a stone fist hatchet for severing tules.

294 439 *Hat making.*—About four men manufacture men's hats of palm straw braid, although production does not meet the local demand. The activity involves complex trading arrangements, for palms do not grow in Tarascan terri-

322 *Wood turning:*

433 *Equipment:*
434 Lathes
Saws
Chisels

Product:
Chocolate beaters

Cost of materials:
No data; the small quantity of madroña wood used is probably a minor factor.

Labor:
[435] About 25 to 30 beaters are made in a day's work. Sale price at 50 centavos per dozen.....$1–$1.25

Comment: Considering the costs of materials and the time involved in selling the product, returns for labor probably are under $1 a day. Only one man in Cherán follows this trade.

MINERAL PROCESSING AND USE

339 *Brickmaking and tilemaking:*

433 *Labor* (per 1,000 tile or brick):

434

	Days
Getting and mixing clay	2
Cutting and hauling wood	1
Shaping	5
Loading kiln	1
Total	9

Other costs (in kind):
Rent of building and right to dig clay on public lands (paid to *municipio*), 10 percent of product value:

Tile, per 1,000	$3.00
Brick, per 1,000	3.20

Sales prices:

[435]

Tile, per 1,000	$30
Brick, per 1,000	32
Gross profit, tile, per 1,000	27
Daily profit per worker	3

Comment: While brick bring a slightly higher price, there is a greater loss in firing. Consequently, profits are about the same as for tile. The demand for brick or tile is not sufficient to employ two men full time. The wage return is hence misleading, indicating what might be possible if demand provided steady labor. [465] The fact that both tilemakers took jobs on highway construction crews whenever possible at $1 a day suggests that income over a long period of time is much less than is indicated. On the other hand, the tilemakers probably average a higher annual income than do unskilled landless farm laborers in Cherán.

333 *Masonry:*

433 *Equipment:*
434 Trowel ("*cuchara*")
Short shovel
½-pound iron mallet ("*marro*," maso)
2-pound sledge with pointed ends ("*picadera*")

BUILDING MATERIALS
AND THEIR SOURCES

313 by a chalk line, and then placed on a platform of
412 poles, sometimes with a pit underneath.[2]

Shakes, *tejamanil*, are made from both pine and fir. Fir shakes are preferred as they last longer despite breaking more easily. Trees used to make *tejamanil* must be straight-grained. The trunk is cut in sections with saw or ax; each section is then split lengthwise with wedges to produce a number of pieces, usually 8, each 4 fingers wide at the bark edge. These pieces are then split into 16 shakes. A special machete is used to start the split, which is then completed with a thin metal or wooden tool.

313 Several types of shakes are made. In Anga-
438 huan, a shake 5 *cuartas* (40 in.) long and 7 inches wide is made to sell in Zamora and is called Zamorano. One shake 4 *cuartas* (32 in.) in length by 4 inches in width, called "little shake" (tasámbani sapírati), is sold in Uruapan, while one called "long shake" (tasámbani iórati), 6 *cuartas* (48 in.) by 1 *quarta* (8 in.), is used in the town itself. Cherán, on the other hand, uses a shake called "thick shake" (tasámani tiápiti), 5 *cuartas* (40 in.) in length. This is the size used in most Tarascan towns. Shakes are occasionally sold by the hundred, but the most common unit is a bundle of 400 (irépita).

412 Master carpenters may use an elaborate variety of modern tools for woodworking and house building. However, everything may be done in woodworking with ax, adze, saw, drill, chisel, and wooden wedges, and many persons work only with these tools.

ADOBE BRICKS

339 Adobe bricks are usually made from suitable earth near the village by specialists. The earth is mixed with manure and water to the proper consistency, then shaped in wooden forms. Two sizes of brick are made, one 3 spans long, one 2½ spans long. Adobes are laid by a mason in a mortar of adobe and manure. Because of the moist
333 climate, adobe walls always rest on a foundation of stone masonry laid in adobe mortar; the foundation may extend as much as half a meter (20 in.) below the ground surface.

[2] A fuller description of lumbering techniques will be given in a general monograph on Cherán in preparation.

339 In some towns, dried pine needles ("*huinomo*"), wheat, or oat straw are used in place of manure.
[192] In the Sierra, adobes are called adóbi; in Ihuatzio, on Lake Pátzcuaro, iauárukata.

STONE

316 Masonry is made of assorted-sized rocks brought
333 from a quarry in the west side of the cinder cone on the northwest edge of town. The stone is a porous soft reddish lava, easily broken or dressed roughly with a hammer. It is carried from the
[497] quarry on burros. The rocks are used for all types of masonry walls. Usually large sizes are employed near the bottom and to make the external faces of the wall; smaller stones are used to fill up the spaces, and usually all external surfaces are filled with small stone spalls set in the mud mortar.

316 Large stones used for foundations are a hard gray lava from the arroyo north of town or from the slopes of a cinder cone northeast of town.
[324] The same rock is employed for finished pieces of

[Continued on p. 10b]

TYPES OF STRUCTURES
WOODEN STRUCTURES

343 Three main kinds of wooden structures are built. These are the "*troje*," or house (trója; in Angahuan, ƚarímba), really a storehouse in use, the kitchen (kosína), and sheds used for storing fodder or sheltering animals. Normally, a mas-
[335] ter carpenter is employed; he usually works for an agreed price and hires a helper.

The "*troje*" is a rectangular structure, nearly square, consisting of one room with a loft over it (fig. 3; pl. 2, upper). The door is always in one of the long walls and there is usually an overhang of the roof, supported on pillars, forming a veranda on this side. Usually the flooring of the first floor is extended to form a floor for the veranda (fig. 3; pl. 4, lower, left).

343 The "*troje*," or house, is elevated on large stones
335 (or stone pillars in some towns), usually 9 in number, one at each corner, one in the middle of each side, and one at the center of the floor. Upon the stones go four interlocking foundation beams, "*polines*" [3] (píɛekua), and a crosspiece destined to support the middle of the floor, the "*atravesaño de*

[Continued bottom page 10b]

[3] Also "*parian*," because they are usually made of heartwood (*ɛatsi*).

stone work used as doorjambs, door corners, and bases for the pillars of verandas where these rest on the ground.

TILE AND BRICK

Tile and brick are little used. Some tile roofs are seen and tiles are sometimes laid over a shake roof when the latter is worn out. Both tile and brick are made from clay occuring near the town. The dry clay is brought to town on burros. The manufacture is carried on in an old chapel, and firing is in a kiln, both located in the church compound. The quality is poor and the demand is small.

MISCELLANEOUS

Adobe-and-masonry walls are commonly finished on the inside and, less frequently, on the outside, with a coat of sand and lime plaster. This material is always imported. So, too, are the pigments used in whitewash or kalsomine finishes employed to decorate plastered walls.

TYPES OF STRUCTURES

FIGURE 3.—Old "*troje*" in Cherán, said to have been built before the Revolution.

la tarima" (uanájɛukua). The foundation beams are square, from a third to a fourth of a *vara* (about 8 to 10 inches) in cross section, but the crosspiece is thinner by the thickness of the floor boards.

The two longest foundation beams and the

341

341 ARCHITECTURE--styles of domestic and nondomestic buildings; architectural theory and principles; practice of architecture (e.g., solicitation of business, planning, draftsmanship, supervision of construction, fees); specialization (e.g., architects, draftsmen); etc. See also:

Construction 33
Landscape architecture 351
Interior decoration 353
Decorative art 531

1: Beals E-5 (1940-1941) 1946

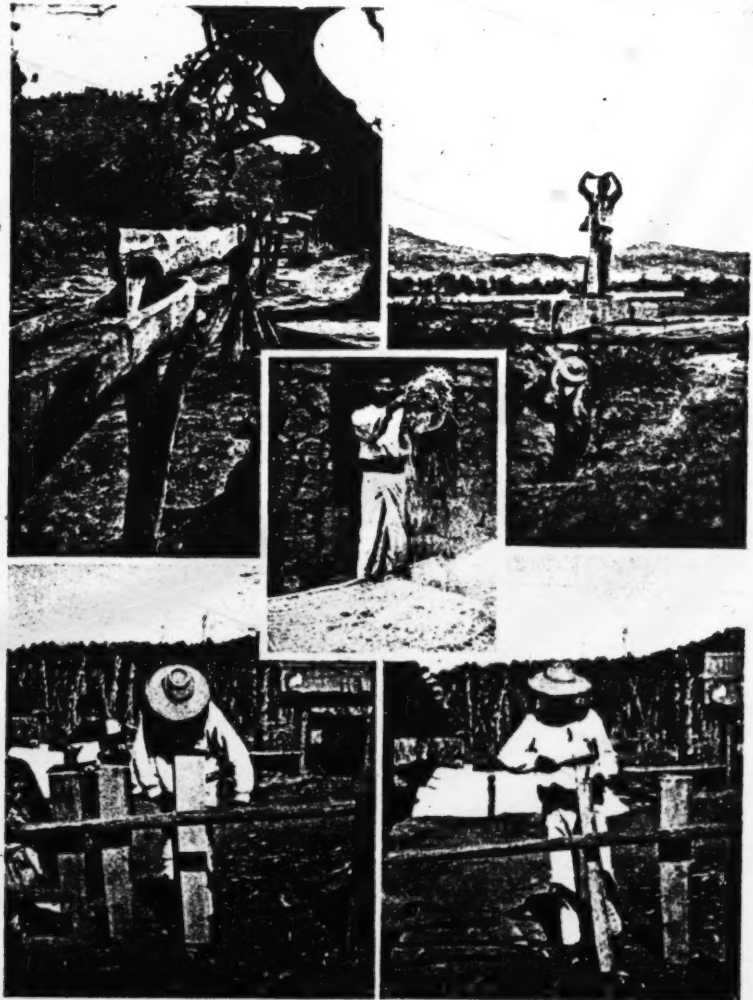
NU34 Tarasco NU34
Sierra Tarascans

312

313

243
341

313

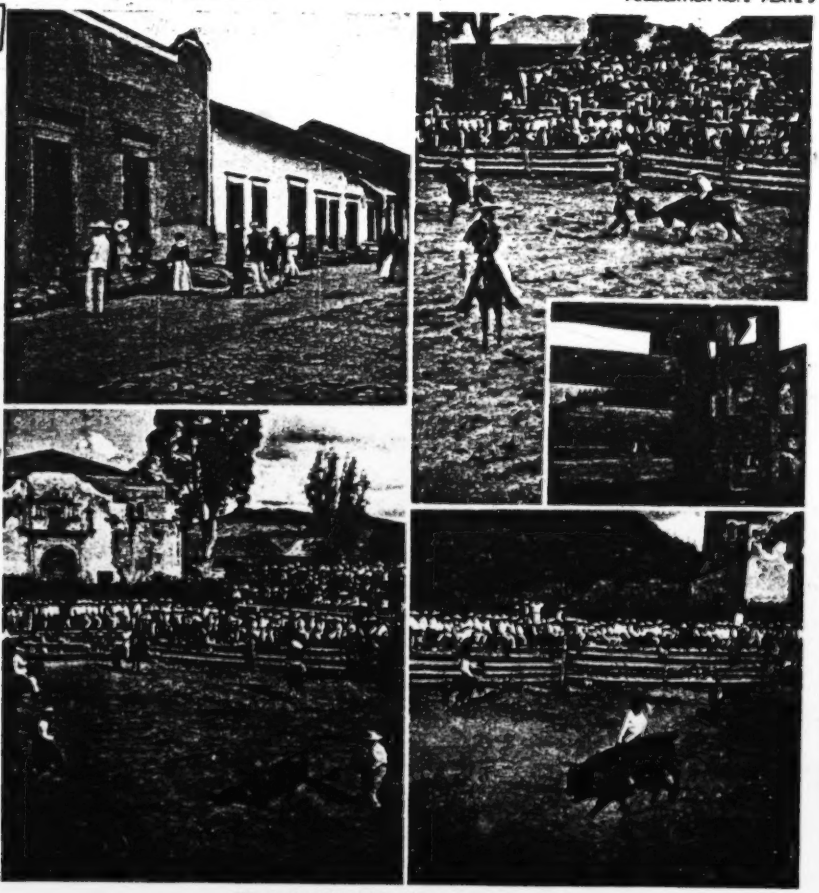


CHERÁN AQUEDUCTS, BOARD SAWING, SHAKE-SPLITTING, AND WHEAT WINNOWING.

Upper (left): The Cherán aqueducts, east of town. *Upper (right):* Sawing planks with sawpit. Often, the timber is raised on a pole framework instead of being placed over a pit. *Lower (left):* Splitting off a shake with a rajador. *Lower (right):* Starting to split a shake with a machete struck with a wooden mallet. *Center:* Cherán man winnowing wheat.

[End Plate 3]

1: Beals E-5 (1940-1941) 1946 NU34 Tarasco NU34
Sierra Tarascans



MARKET AND BULL FIGHTING DURING FESTIVAL.

Upper (left): Pottery before being unpacked for the market. *Upper (right):* Riding a bucking bull, the man with cape diverting it from the horses. *Lower (left):* Cowboys (*vaqueros*) throw the bull in the bull ring, then tie a rope around its forequarters. *Lower (right):* Bull riding. *Inset:* Construction of bull ring fence; post on right has holes cut with ax to receive the logs forming the gate.

[End Plate 5]

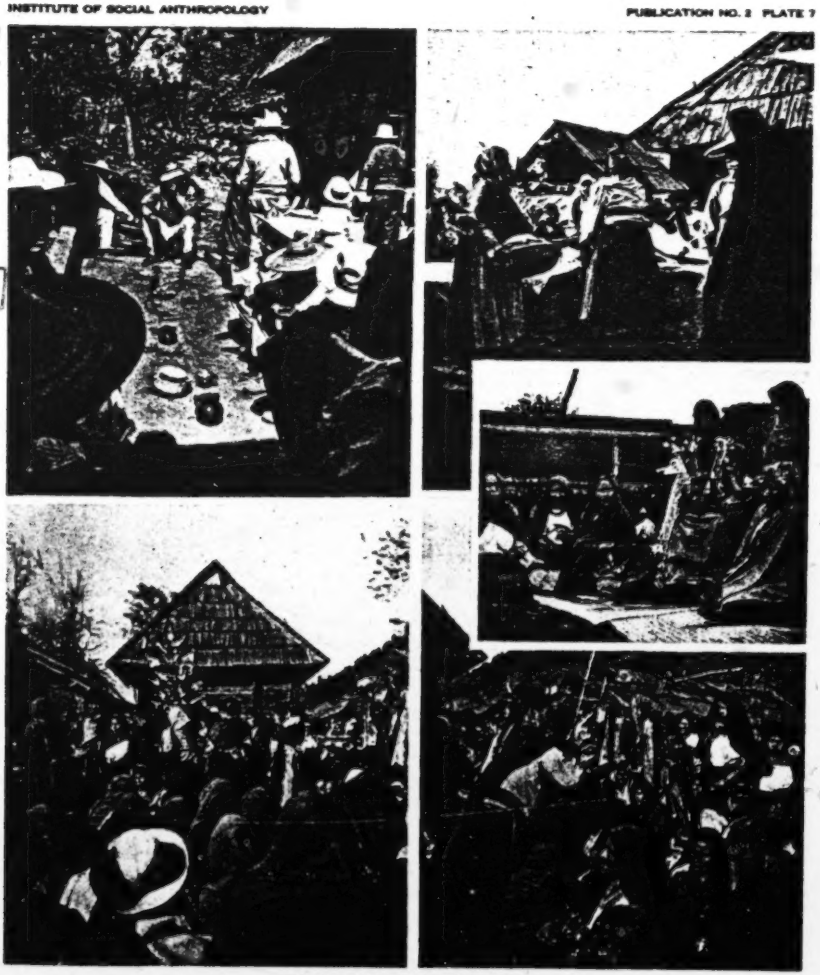
1: Beals E-5 (1940-1941) 1946

NU34 Tarasco NU34
Sierra Tarascans

574
585
516

341

[415]



ROOFING FIESTA AND WEDDING.

Upper (left): Men eating at a house-roofing fiesta; baskets of tortillas, jars of water, and dishes of salt lie on the ground. Remaining photographs, a Cherán wedding. *Upper (right):* Preparing to distribute bread, while one of the godmothers oversees the work. *Lower (left):* Bringing in paper ornaments for distribution. *Right (middle):* The godmothers and close relatives of the groom. *Lower (right):* Tying a ribbon in a godmother's hair.

[End Plate 7]

463 specialists. The situation in other Sierra towns is similar. In the Lake region as well, nearly every one can make adobes and erect a house of sorts, but good work requires a specialist.

000 In the Sierra, a master carpenter is usually em-

PRELIMINARY NOTES ON THE DISTRIBUTION OF TYPES

● 341 No complete survey of construction types has
184 yet been made but some general data are available. It is clear that many fundamental features of the architecture extend through not only large areas of the Tarascan country but also into adjoining regions settled by Mestizos. The type of masonry construction with tile or shake roofs and wide overhanging eaves extends far beyond the limits of Tarascan settlement, and the wide eaves are characteristic of even such a town as Morelia, the State capitol. In general, the higher, more heavily forested areas from at least as far west as Tingüindin to near Morelia show a predominance of wooden construction, usually with shake roofs. The lower and, in some instances, drier regions show a predominance of masonry-adobe structures with tile roofs and wide eaves. In some cases, shakes replace tile as roofing material. Distribution of the wide-eaved masonry-adobe style extends beyond the present Tarascan boundaries. It ends sharply west of Zamora, and it disappears east of Morelia.

The following tabulation shows the present

335 In the Sierra, a master carpenter is usually
465 employed on a contract basis. Often the carpenter employs a helper. In addition to their pay, the carpenter and helper are given their food. Adobe or stone structures are also built under contract, but in this case the workmen are not fed.

PRELIMINARY NOTES ON THE
DISTRIBUTION OF TYPES

● 341 known distribution of types within Tarascan
184 boundaries:

Mostly wood	*Mostly masonry-adobe*	*All masonry-adobe*
Ahuiran	Cuanajo	Cucuchucho
Angahuan	La Cañada (all towns)	Huecorio
Arantepakua	Puacuaro [2]	Ihuatzio
Aranza	Tarecuato	Janicho
Capacuaro	Uruapan [1] [2]	Jarácuaro [2]
Charapan	Zacápu [1]	Naranja
Cherán	Zamora [1]	Pareo
Cocucho		Pátzcuaro [1]
Corupo		Quiroga
Nahuatzen		Santa Fé
Nurió		Tarejero
Paracho		Tecuena
Parangaricutiro		Tiríndaro
Parícutin		Tzentzénhuaro
Patamban		Tzurumútaro
Pomacuarán		Yunuán
Quinseo		
San Felipe		
San Lorenzo		
Sevina		
Tucutacato		
Tingüindin		
Urapicho		
Zirosto		

[1] Indicates Mestizo town showing influence of styles.
[2] Indicates shake roofs common.

[p.21b]

11: Boyd H-4, 5 (1953) 1958
[End Plate 2] NU34 Tarasco NU34

341
342
351
417

363
492
291
516

Plate II. Tarascan Houses and Mode of Travel

[196] *Upper,* Tarascan homes, wooden fences are a recent innovation.
[403] *Lower,* Tarascans returning to mountains after selling firewood in
[438] Morelia.

11: Boyd H-4, 5 (1953) 1958
NU34 Tarasco NU34

[End Plate 3]

341
342
291
115
854
493
122

363
341
312
367

Plate III. Views in Morelia

Upper, Ignacio Peña, narrator of the myth of creation, in front of author's apartment.
Lower, Spanish aqueduct built to bring water from mountains to city.

[177]